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ABSTRACT

At his inauguration people hail every neophyte college president as the institution's new leader and ring the changes of the importance of leadership. Some, however, never become leaders because of a fact not often emphasized: they cannot successfully handle the conflicts that inevitably come to their offices. Among the conflicts that every college president must mediate, those relating to the curriculum stand highest in significance and create more emotion than those in any other area of his concern except, perhaps, those having to do with academic freedom. Three curricular conflicts with which every president must deal, at one time or another, arise from the divergent claims of: (1) general and specialized education; (2) the humanities and the sciences; and (3) teaching and research. Each must be placed in its socio-historical context, even considering the colonial colleges and the changes wrought during the last half of the eighteenth century. (Author/MSE)

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THREE CURRICULAR CONFLICTS*

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At his inauguration people hail every neophyte college president as the institution's new leader and ring the changes on the importance of leadership. Some, however, never become leaders because of a fact not often emphasized, namely, that they cannot successfully handle the conflicts that inevitably focus in the office. To be a college president is to live at the point where all the importance conflicts of the institution intersect. Those who have the skill to handle them at once sagaciously and progressively become leaders; those who do not either move on to other posts or become mere headmen, that is, men heading processions that crawl or that go in directions determined by others.

Among the conflicts that every college president must mediate, those relating to the curriculum stand highest in significance and, further, create more emotion than those in any other area of his concern except perhaps those having to do with academic freedom. In this paper I canvass three curricular conflicts with which, at one time or another, every present-day college president must deal. They arise from the divergent claims of, first, general and special education, second, of the humanities and the sciences, and third, of teaching and research.

Before discussing the first of the three, however, I'd like to put them all into socio-historical context. This requires brief descriptions of the colonial colleges, of the massive new social forces beginning to act upon the Western World during the last half of the eighteenth century, and of the curricular results of these forces.

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None of the three conflicts I've cited disturbed the nine colonial colleges or those following their tradition. They offered little special education, they taught little science, and they engaged in little research. They had only one function, namely, literary education. Observe that I have said "literary" and not "liberal" education. These were synonymous terms, but the locution "liberal education" had little currency in the United States until the nineteenth century. Late in the

*An address given at the Presidents' Institute of the Institute for College and University Administrators of Harvard University, June 22, 1960.

century, however, it won out in competition with the term "general education" which some educators like President Charles W. Eliot of Harvard preferred. Today this terminological competition continues, but no phrase better describes the curriculum of the colonial colleges than does "literary education."

Not until the Civil War did conflict arise between special education and general, liberal, or literary education. The colonial colleges provided all their students with the same kind of education through a fixed and prescribed curriculum with no special occupational orientation. Contrary to a widely-held opinion, they were not established to train clergymen per se. Rather they gave all their energies to educating members of the literary classes or what went by the name of the "republic of letters." They offered a "polite education" which scorned everything that had direct economic utility.

The colonial literary curriculum suffered little from the second of the three conflicts -- that between the humanities and the sciences. "Literary education" consisted primarily of Greek and Roman literature and included only snippets of largely outmoded science studied from textbooks and not in laboratories. Thus with the flowering of science the literary colleges came to be called "classical colleges." This name didn't begin to give way to that of "the college of arts and sciences" until about 1890 when the proponents of the experimental and social sciences finally began to break down the barricades that the classicists had erected to keep them out.

In another piece of writing that I have just finished and hope soon to publish, I enthusiastically describe the high values of the classical curriculum in its heydey, and so I don't want to give the impression that I am unaware of its precious products. It proved, however, to be an inadequate curriculum for the revolutionary times ahead.

Nor did the colonial colleges suffer from the third conflict that plagues today's higher educational structures: their dual functions of teaching and research. Here and there during the colonial period a professor conducted experimental studies or wrote an occasional book, but research as understood today had no place in American colleges or in the universities of Europe other than those in Germany and one or two in Italy. It did not become an accepted function of American universities until after the opening of Johns Hopkins in 1876.

In sum, America's first colleges were single-function institutions teaching a non-specialized, non-scientific curriculum. Their prescribed classical curriculum lost its value and its appeal because of a long series of events occurring in the last half of the eighteenth century, events which made inevitable today's curricular conflicts. Some of the most important occurred during the year of the signing of the American Declaration of Independence. I list five of these as illustrative of several dozen happening in that and surrounding years.

These events of 1776 were (1) the putting into operation of the first two steam engines sold by James Watt, one in a coal mine and the other in an ironworks, a circumstance that presaged the end of the long Age of Muscle Power and the beginning of the Age of Machine Power; (2) the reading by Antoine Lavoisier of a paper before the French Academy of Sciences anticipating his later promulgation of the law of combustion, a concept that led to the initiation of the New Chemistry and thereby to an enormous leap forward in all the physical sciences; (3) the publication of Adam Smith's The Wealth of Nations, a work which stated the principles that made it possible for entrepreneurs to exploit the steam engine and the flood of other new machines and processes conceived by inventors and scientists; (4) the submission to the Virginia House of Burgesses by Thomas Jefferson and four associates of a series of bills proposing new statutes for that state including those outlawing primogeniture and entails and another establishing religious freedom, bills which Jefferson declared would establish a system of government from which "every fibre would be eradicated of ancient and future aristocracy"[1]; and (5) the presentation by the French encyclopedist Denis Diderot to Catherine the Great of Russia of a plan for the university at St. Petersburg that she contemplated founding, an amazing document that prophetically described the comprehensive American university that began to emerge a century later.

These and other portentous developments of 1776 and adjacent years commingled to sound taps on the Age of Muscle Power and reveille for the Age of Machine Power. They also largely nullified the value of the literary education given by the colonial colleges. The new age required educational conceptions and processes that could produce the manpower needed to direct and use the new energies -- social as well as physical -- becoming available with fantastic rapidity to men and nations. It also required huge quantities of new knowledge and large numbers of specialists to develop and disseminate it among the managers and workers of the fast developing agricultural, commercial, industrial, political, and social institutions spawned by the new forces in the world.

A few discerning men foresaw the advent of the new era and recognized its intellectual and educational implications. One of them, Benjamin Franklin, anticipated the oncoming age even before its dawning as witness his 1749 pamphlet Proposals Relating to the Education of Youth in Pensilvania and his efforts some years later to introduce applied science and commercial subjects into the

[1] Autobiography, Monticello edition, 1904, 73-74.

curriculum of the Academy and College of Philadelphia (the University of Pennsylvania since 1791) whose original board of trustees he chaired. Franklin also influenced the first president of King's College (Columbia since 1784) whose initial announcement concerning the studies of the new institution included courses in "husbandry, commerce, and manufactures."

These and other efforts to make American colleges equal to the new age did not succeed, however, because as I read the records, of two chief reasons. First, those in control of the colleges in operation before the Civil War -- and some of them long after -- believed zealously that no one could be considered to be an educated man who did not have a classical education, and second, because they failed to discern the signs of the onrushing Technological Era. Thus in 1828 the Yale Faculty roundly deplored efforts to revise the curriculum and the same year the adherents of Oxford and Cambridge sneered at the just-established University of London as a "new-fangled scheme of pantology."[1] Then in 1840 President Josiah Quincy of Harvard blasted the efforts of those urging reform by writing that "the safe ways are the trodden paths" since "the wisdom of antiquity . . . is chiselled upon (curricular) works little less admirable than those of nature herself, and imperishiable as her mountains."[2]

President Quincy could not have written this statement had he comprehended the significance of such events as the patenting that year of Samuel F. B. Morse's device for sending messages over wires; nor could the Yale Faculty in 1828 have written its famous denunciation of the new demands being made of the colleges had it perceived the implications of the laying of the rails of the first American "steam road" in Baltimore that Fourth of July; nor could the utilitarian program of the University of London have been scoffed at by English classicists had they understood the import of the Corn Law presented to Parliament in mid-July.

As observed earlier, however, perceptive people like Benjamin Franklin sensed the oncoming of a new and fabulous historical epoch. They therefore set about the arduous and unfavored business of integrating the schools and higher educational institutions of the country with the broadening activities, interests, and needs of Americans. They directed their first attention to the problem of expanding college curriculums to include courses of value to others besides those planning to enter the so-called learned professions of divinity, law, and medicine.

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[1] Mark Pattison, Oxford Studies, 1855, 262.

[2] The History of Harvard University, 1840, 2:456-57.

They used two primary mechanisms to expand college offerings: first, the parallel curriculum, and second, the elective principle. Time permits only a brief paragraph about each of these devices.

The parallel curriculum opened the way for science and engineering. It required the organization of new structures associated with the literary colleges but completely separate from them. The idea of the parallel curriculum seems to have originated about 1825 in the fertile mind of Eliphalet Nott, the prodigious president of Union College in Schenectday for sixty-two years beginning in 1804. When in 1847 Harvard College opened its parallel Lawrence Scientific School and Yale established its Sheffield Scientific School, the spread of the parallel curriculum over the country became inevitable. They prepared for the organization of the score or more of specialized university schools and colleges devoted to subjects ranging from agriculture to veterinary medicine. They assured the emergence in the United States of the comprehensive university that Diderot had envisioned in 1776. By 1900 it had unmistakably arrived.

The elective principle requires a bit more description. To begin with, take note of the fact that I have called it the elective principle and not the elective system. The principle of student freedom to elect a portion of their studies has found expression in a score or more of systems, the most widely followed to this day being that originated at the Sheffield Scientific School of Yale about a century ago and known as the group system. No institution has ever followed Eliot's widely publicized free-elective system except Harvard College proper, not even its parallel structure, the Lawrence Scientific School. Moreover, Harvard College abandoned it in 1910 and moved to the group system. Be that as it may, the elective principle in one or another form has been adopted by every American college and university. It seems clear to me that it will not soon -- if ever -- be successfully challenged. I say this with confidence because the fantastic and continuing growth of knowledge makes selection among studies inevitable. Even St. John's College, Annapolis, which declares that it has a completely fixed curriculum, permits "special arrangements" for seniors.

Parallel curriculums and the elective principle fostered both faculty and undergraduate specialization. Both began to ripen in the 1870's and 1880's, but they did not blossom until after 1900. When in 1872, for example, David Starr Jordan began his career as professor of natural history at Lombard College in Illinois he found that his "chair"

> . . . demanded classes in Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Political Economy,

> Paley's "Evidences of Christianity," and incidentally German and Spanish! I also had charge of the weekly "literary exercises," consisting of orations and the reading of essays . . . with a class in Sunday School as a good measure.[1]

Undergraduate specialization began concurrently with the establishment of parallel curriculums, but most liberal arts colleges did not require it of their students until well into this century. Harvard, for example, first made concentration or majoring compulsory for the Class of 1914. Now nothing is more characteristic of American higher education than majoring.

The evolution of parallel curriculums into specialized schools, the elective principle, and specialization led to a complex of developments, three of which need citing in preparation for the discussion of the conflicts I named at the beginning of this paper and to which I'll soon now be coming.

In the first place, for purposes of teaching and research, knowledge has been extensively subdivided as witness the following observation made by the Dean of the Graduate School of the University of Wisconsin in 1933:

> We not only have "chemists," we have "colloid chemists." We not only have "colloid chemists," we have "inorganic colloid chemists," we have "aerosol inorganic colloid chemists" . . . (and even) "high temperature aerosol inorganic colloid chemists," and so on indefinitely until the scientist is fractionated to a single paragraph of his doctor's thesis.[2]

Faculty specialization has had many effects but probably none more significant that its promotion of faculty voting blocks on curricular questions. These voting blocks aren't completely disciplined in the sense that all members of departments and divisions vote the same way, but statistical central tendencies clearly exist. They produce in every faculty what David Riesman has called "veto groups,"[3] that is, groups which view the curriculum chiefly in terms of the interests of their subjects rather than in terms of over-all institutional policy. Every college president and academic dean knows of their potency, and the successful ones are those who have the political savvy to know how to manipulate them. Of untold value, I've long felt, would be case studies of how politically astute administrators like Eliot and Lowell of Harvard, Aydelotte of Swarthmore, and Coffman of Minnesota managed to counteract the power of the veto groups in their institutions.

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[1] The Days of a Man, 1922, 1:105.

[2] Charles S. Schlicter, "Polymaths: Technicians, Specialists, and Genius," Sigma Xi Quarterly, September 1933, pp. 97-98

[3] Constraint and Variety in American Education, 1956, Chapter Two.

The second development relates to the rise of research to its present position of pre-eminence among the functions of American universities and even of unitary undergraduate colleges. Until the opening of Johns Hopkins University in 1876 no higher educational institution in the country considered research to be an important business, and it did not begin to attain its present paramountcy until after the organization of the Association of American Universities in 1900. For example, just about the time that Johns Hopkins got under way one of the members of the Department of Chemistry of Harvard, C. L. Jackson, went to President Eliot with a request for a semester off and a few hundred dollars to do a chemical investigation. Eliot asked, "What good will this do Harvard?" Jackson responded that he would write an article reporting his findings. "But there is no chemical journal in this country," said Eliot. "Where will you get it published?" "In a German journal," Jackson answered. Eliot ruled that this would do Harvard no good, and therefore Jackson got no semester off and no money.[1]

Here's another example of the recency of the research emphasis. In 1910 the Independent, a weekly magazine of the time, commissioned a chemist named E. E. Slosson to visit fourteen American universities and to write articles about each of them. Later they came out in a very interesting volume, Great American Universities, that described the academic scene of half a century ago better than any other I know. I particularly remember Slosson's passage to the effect that at the University of Minnesota the professor's investigations, in the eyes of the board of trustees and the president, were his own private business, much like playing the piano or collecting etchings.[2]

All the historical changes thus far mentioned have contributed to the third development that needs citing, namely, to the maturation of the characteristic of American higher education that foreigners have such difficulty in understanding and that some Americans castigate bitterly -- I mean its extraordinary diversity. Despite such criticisms, this diversity -- structural, curricular, and qualitative -- constitutes the most valuable characteristic of American colleges and universities.

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[1] Charles W. Eliot, Henry James, 1930, 2:19.

[2] Great American Universities, 1910, p. 246.

So much for background. I now move on to the first of the three conflicts for whose discussion the ground has now been prepared, namely, that between general and special education. I shan't stop to explain why, for the time being at least, I prefer the name general education to liberal education but, instead, give you the definitions I shall be using for it and for special education. By general education I mean that variety of education that helps make an individual to become more intelligently aware of his own nature and that of the society and universe in which he lives; education that sensitizes him to his intellectual, social, moral, and spiritual patrimony; that gives him the skills he needs to cope with his own and society's problems and to understand and communicate with his fellows regardless of their work in the world; and, moreover, that inculcates the civilized attitudes without which society cannot be maintained.

By special education I mean any kind of special learning. It differs from general education in that it concentrates on one sector of knowledge. It is education for some special role and hence contrasts with the education of the student as human being per se. It encompasses not only occupational training and the pre-occupational education typified by the undergraduate courses required of those seeking admission to medical schools but also non-preparatory majoring, that is, concentrated study of a subject not directly related to one's intended occupation.

The conflict between general and special education seems to me to grow from the most deep-seated of all differences of opinion among American educators. The issue is this: does general education have any proper place in higher educational institutions; shouldn't it be pushed back into secondary schools as in Europe; or shouldn't it be assigned to junior colleges? This problem has afflicted American higher education for more than a century; and although the advocates of abandoning general education suffered a severe defeat at the University of Chicago in 1955 some of them continue to nurse hopes of eventual success. Meanwhile they short-change general education.

The first attempt to relegate general education to the secondary schools got under way at the University of Michigan in 1852 when President Henry P. Tappan announced his intention of following the Prussian system of education which he declared to be incomparably the best in the world. The liberal arts colleges of the state together with other opponents of Tappan's worsted his plan but at least a dozen other institutions made later and also unsuccessful attempts to adopt it. Two presidents of Stanford, for example, made five such efforts, the last in 1939; and Robert Maynard Hutchins went all out for it

in 1942 when he got a small majority of the faculty of the University of Chicago to vote to grant the bachelor of arts degree at the end of the traditional sophomore year.

The Hutchins plan, however, did such serious damage to the University of Chicago that in 1955 it had to drop its two-year baccalaureate which, incidentally, some of its critics called the bastard of arts degree. Proponents of bisection, nonetheless, keep on hankering for it as witness its endorsement -- albeit somewhat gingerly -- by Professor Richard H. Shryock in his study of the Faculty of the University of Pennsylvania published last year.[1] He'd like to see the University of Pennsylvania, he writes, give all its attention to professional and graduate education, that is, relinquish the enterprise of general education.

It may be that in the course of time a few multi-structured universities like the University of California will succeed in converting one or two of their campuses into units having no concern with general education, but nothing on the horizon suggests that this pattern will be widely followed. On the contrary, all signs seem to indicate that general education will remain a function of all except possibly a handful of units within mammoth universities.

This does not mean, however, that the status of general education will improve in comparison with special education. A number of formidable factors seem likely to keep it shackled. These include the lingering belief in some influential quarters that it properly belongs in secondary education, disinterest in it on the part of a substantial proportion of faculty members, the present major system, the dominant status of the research function, the inability of the advocates of general education to agree about its content and methods of teaching, and the widespread student and parental insistence upon the primacy of occupational training on the undergraduate level. Thus the flurry of concern about general education that seemed so promising just after the Second World War petered out after having accomplished relatively little except in a few institutions.

Currently an occasional president or a dean bespeaks the importance if not the urgency of better general education, but his eloquence produces few results other than the appointment of a new committee to fret about it. Seldom do these committees recommend anything substantial because they know that in all probability their colleagues will veto such proposals. Thus they typically either disband after presenting sterile reports, or they bring forth midgets which are promptly adopted with such flourishing fanfare that one would think them counterparts of Ulysses.

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[1] The University of Pennsylvania: A Study in American Higher Education, University of Pennsylvania, 1959, p. 40.

What I've been saying may strike you as pessimistic if not cynical; but I think of myself, rather, as case hardened and at least a little aware of historical trends and current pressures. In any event, I expect no basic changes during the near future in the conflict between general and special education. The president concerned about the conflict can, I think, help prepare for its eventual resolution by taking a series of actions. First, he should read frequently the first chapter of President Lowell's book What a University President Has Learned and make a long-range plan, the whole of which he divulges to no one; second, he should follow President Eliot's advice about being patient with small gains in the implementation of his plan; third, he should find new money specifically ear-marked for the support of general education since most faculty members, like everyone else, understand the power of money; and fourth, he should work energetically with other college presidents for the reform of the graduate school of arts and sciences, the chief locus of the difficulties of general education.

The first three of these suggestions perhaps need no enlargements, but the fourth clearly does. I shall return to it after preparing the ground further by the assessment of the second of the three conflicts being reviewed. It relates, to refresh your memories, to the divergent claims of the humanities and the sciences.

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By the sciences I mean not only the physical and biological sciences but also the social sciences. They differ; but for present purposes they can be discussed together and defined as "the most authentic knowledge of nature, man, and society" yet accumulated "by means of the (best) methods and techniques" available.[1] In a minute or two I'll quote a comparably succinct definition of the humanities; but since considerable difference of opinion exists about what the humanities are, it seems desirable to sketch the recent history of the term.

Until well into this century, the humanities meant the classical languages and only the classical languages. Professor B. L. Ullman, a University of North Carolina classicist, made this clear in an article entitled "What Are the Humanities?" published in the June, 1946 issue of The Journal of Higher Education. By the time of the First World War, however, high prestige people like Sir William Osler began to talk and write about "the new humanities" which should, they held, replace the abandoned or neglected classical studies. By "the new humanities"

[1] John Dewey, "The Determination of Ultimate Values," etc. The Thirty-Seventh Yearbook of the National Society for the Study of Education, Part Two, 1938, p. 473.

they meant the subjects which each of them individually judged to be humane. Their meanings of "humane," however, differed widely; and so when the adjective "new" sloughed off in the 'twenties, a score of kinds of humanism and a miscellany of subject groups called "the humanities" emerged. This led to widespread confusion even among those who taught subjects universally considered to be humane. It also led to protests against the classifying of studies under the name of "the humanities." Thus, for example, Ralph Barton Perry, distinguished Harvard philosopher, wrote as follows in 1938:

> There has lately developed a practise of grouping departments under "divisions," a popular classification being: physical science, biological science, social science -- and "the humanities." Now this is a most extraordinary arrangement. In an institution which professes to exist for the purpose of inculcating it, liberal culture is only one quarter of the whole; and a nondescript quarter, occupying the place of a sort of rearguard appointed to pick up the stragglers and misfits which find no place higher up in the procession.[1]

The number of criticisms of the term "humanities" and its use as a curricular category has lessened, but they continue in such statements as that of the professor of English who held the deanship of the Graduate School of Cornell University in 1953, Charles W. Jones, now of the University of California. Said he at a symposium that year on their meaning and importance:

> Much of the time of conferences like this is wasted because Americans lack a developed language for easy communication of important ideas and experiences . . . . No clearer indication of the unsemantic nature of the American language is needed than our topic, the humanities. This term has bobbed in and out of American diction. It is now in vogue. Yet despite the academic pounding into shape . . . given it in innumerable faculty meetings, brochures, and classes, it is almost as slippery a term as ever.[2]

Despite the slipperiness of the term, however, I believe that a definition has been stated with which most people in the humanities appear to agree. Waldo G. Leland, long executive director of the American Council of Learned Societies, phrased it as follows:

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[1] "A Definition of the Humanities," The Making of the Humanities, Princeton University Press, 1938, p. v.

[2] Current Issue in Higher Education 1953, The Association for Higher Education, Washington, D. C., p. 161.

> The natural and physical sciences deal with man's environment . . .; the social sciences, with man's association with other men; . . . the humanities . . . with the manifestations of his spiritual existence.[1]

This definition has limitations, but nonetheless in my opinion it ought to be more widely used by people in the humanities because it states the core of their concerns -- man's spiritual life -- and therefore provides a touchstone for their own teaching and research and also a bridge for communication with scientists, social scientists, and people in general. Unfortunately, however, some humanists seem not to be interested in communicating on equal terms with others. They stand aloof and hence create conflicts which damage all the higher learning including their own sector.

Consider statements made about the attitudes of humanists toward science. "For natural science," wrote John Herman Randall, Jr., Columbia philosopher, "humanism was and has remained an almost unmitigated curse."[2] Irving Babbitt of Harvard, the high priest of American humanists until his death in 1933, illustrated Randall's observation by writing that "the humanities need to be defended today against the encroachments of theology."[3] Van Wyck Brooks, briefly a member of the Stanford Faculty and long an eminent American literary historian and critic has contributed this sneer: "As for science, . . .one can obtain science by the cartloads from any of a dozen institutes of research." To this Hans Zinsser, a humanistic biologist, responded: "As for literature, one can get cartloads from any Carnegie Library."[4] Other scientists have retorted to humanists even more vigorously including Edwin G. Conklin, Princeton zoologist who began his career teaching Latin and Greek. Humanists, he wrote in 1938, "have misinterpreted and opposed almost every great generalization of science from the Copernican Theory to the Constitution of the Atom."[5]

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[1] "Recent Trends in the Humanities," Science, March 30, 1934, p. 281.

[2] The Making of the Modern Mind, 1926, p. 212.

[3] Literature and the American College, 1908, p. 31.

[4] "None of My Business: Or Thoughts of a Biologist on Education," School and Society, November 25, 1933, p. 690.

[5] "The Place of Science in the Liberal Arts College," Bulletin of the Association of American Colleges, December 1938, p. 489.

All but one of the quotations I've been using in discussing this second conflict, may I point out, date back to the 1930's or earlier. I've used them because I've been able to find few recent blasts from either camp.[1] On the contrary my notes include not a few statements of mutual appreciation. This seems almost certainly to mean that a rapprochement has been evolving; that each group has glimmers, at least, of the virtues and values of the other; that the more perceptive and large-minded members of both see that the two areas supplement and hence need one another. They have all but ended a feud as deplorable and disastrous to learning and higher education as the feud between the Hatfields and their McCoy cousins to West Virginia and other states.

One of the sovereign characteristics of scientists, be they concerned with the physical or the social world, is their attention to today's phenomena and problems. They look outward and also forward into the future. On the other hand, because of the nature of their subjects, humanists incline to look inward and also backward to the past. I say "incline" because some people in the humanities deal with the present and the future just as some scientists recognize the continuing significance of the past. Thus almost every academic subject has within it workers who look inward and outward as well as backward and forward. Their breadth and depth of view has had the felicitous effects of lowering and making more elastic the boundaries between the sciences and the humanities and of activating research and teaching in such inter-area topics as the history and philosophy of science, the culture of peoples in all its expressions, the history and social significance of technology, the scientific bases of the fine arts.

A friend of mine, for example, teaches in a department of English, but his writings and advanced courses have to do largely with seventeenth century science. Another, an historian, concentrates on medieval technology. A third, a musician, gives part of his time to the physics of wind instruments and the physiology of their players. The time may be approaching when the relatively new tripartite categorization of science, the social sciences, and the humanities will give way to a problem-centered classification. James Harvey Robinson proposed this in his brilliant little book of 1923, The Humanizing of Knowledge, whose reading in my opinion is a must for all new college presidents as well as of everyone else charged with responsibility for teaching and research in higher educational institutions.

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[1] In his The Two Cultures, 1959, C. P. Snow includes this comment: "Thirty years ago the cultures (science and humanism) had long ceased to speak to each other: but at least they managed a kind of frozen smile across the gulf. Now the politeness has gone, and they just make faces." P. 19. Mr. Snow observes, however, that the two cultures conflict less in the United States than in England and that educational practises primarily account for the American advantage.

The wearing away of the present system of curricular organization, however, will take some decades at least; and meanwhile what about the conflict between the sciences and the humanities? Here, too, presidents and their associates must be patient; but they can help reduce the clash and the cleavage, I believe, by means of at least one course of action, to wit, selecting as new faculty members as many broad-gauged young men and women as they can find. This will not be easy, however, until the major source of their supply, the graduate school of arts and sciences, has been very considerably changed. These most powerful of all units among higher educational structures primarily train research people and generally deny any responsibility for preparing their students to teach, just as they deny -- as observed earlier -- any concern for general education. I therefore move on to the last of the three conflicts I've selected for review.

- 6 -

Although the conflict between teaching and research seems to me to be the most crucial as well as the most heated of those trammelling higher education both here and in other countries, I believe that a solution is now in sight. I doubt that it will soon be recognized as such, and hence I don't expect it to be widely employed soon; but I think I see signs of its eventual acceptance.

The solution grows from two premises, first, that every teacher should do research, and second, that the kind of research he does should harmonize with the kind of teaching he does. I shan't stop to discuss the first premise since most people in higher education accept it -- or at least pay lip service to it -- and also because those who don't would, I believe, if they could assent to the second. I therefore repeat the second premise for emphasis: the kind of research a faculty member does should harmonize with the kind of teaching he does. The essential terms of this proposition are "kind of teaching" and "kind of research." I assess them in turn.

Hardly without exception, discussions of college and university teaching fail to distinguish among its varieties. This leads to counterposing it negatively with research. The fact is, however, that all higher educational institutions make available to their students three quite different kinds of teaching. Before I name and enlarge upon them, I need to petition your toleration of some new terminology; and since people guy educationists for coining new words, I want to read a short passage from the syllabus of my course at Stanford in which I introduce these terms. It defends the right of educationists to use a specialized vocabulary and, further, fights back at those who scoff at those who do. It reads:

> The critics of the vocabulary of educationists seem to be saying that we who are concerned professionally with education have no right to use words except those in common use. We must, in brief, employ only garden-variety words. To this prohibition I for one respond "poppycock."
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> Educationists can't be hobbled in any such fashion. Their subject has been characterized by Kant as one of the two "most difficult of human inventions" (the other being government), by Spencer as "the subject which involves all other subjects," and by Dewey as "the most complex, intricate, and subtle of all human enterprises."
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> The study of education cannot progress without specialized words. When the physicist abandons his isotopes, the biologist his enzymes, the geologist his phacoliths, the anthropologist his phonemes, the grammarian his gerundial genitives, then and then only will -- indeed can -- students of education limit themselves to the vocabulary of the living room and the dinner table.

Here, now, are the terms to which I've been referring: logocentric, practicentric, and democentric. You all recognize the stem "centric" as meaning "centered in"; but perhaps your knowledge of the classical languages isn't as thorough as that of your predecessors of earlier times so that I probably need to explain the prefixes. Logo refers to knowledge, practi to practice, and demo to people. Hence logocentric teaching concentrates on the training of people who plan to be intense students of a subject and as such devoted to extending its frontiers; it is teaching, to use a common expression, concerned with knowledge for the sake of knowledge. Practicentric teaching trains practitioners of any art -- agriculture, law, medicine, psychiatric social work, and the uncountable number of others. Finally democentric teaching interprets for people in general -- that is, for non-specialists -- the work and findings of logocentrists and practicentrists; it seeks to give them an intelligent but not thorough understanding of a subject.

These three new terms have this virtue if no other: they correlate, and each therefore suggests the other two. No less important, they call attention to the interdependence and also to the need of all three types of teaching. Knowledge and society stand still without logocentric teaching. The vocations could not recruit new members or improve their methods without practicentric teaching. The range of interest and sensitivity of each of us, in turn, depends in large measure upon the amount and quality of the democentric teaching from which we've profited.

Everyone admits the value of logocentric and practicentric teaching, and hence both prosper in colleges and universities. As pointed out earlier, however, not a few professors and some administrators believe that democentric education (earlier in this paper called general education) should be remanded to the secondary schools. I've also pointed out, however, that many full-dress efforts to do this have failed. This means that regardless of the prejudices of proportions of almost all faculties, the institutions in which they have membership cannot avoid responsibility for it. They can, of course -- as many universities do -- slight it by such devices as turning it over to junior members of the faculty and large portions of it, even, to graduate assistants. They can also undermine it by delaying or denying promotions to faculty members who teach democentric courses, a practice not infrequently employed over the country.

Pushing democentric teaching into neglected corners, however, cheats students and society and, moreover, injures colleges and universities themselves. Future budgets depend both in public and private institutions not only on the good will of former students but also increasingly upon widespread understanding of the work of practicentric and especially of logocentric specialists. This will not be forthcoming without the help of alumni who comprehend its urgency. These considerations -- let alone professional and institutional integrity -- make good democentric teaching imperative. To belittle it is, on the one hand, to take the public-be-damned attitude of the Robber Barons, and on the other, to disregard the future well-being of the higher learning and of the institutions dedicated to its advancement.

Until the past few years the graduate schools, however, have ignored the preparation of democentric teachers. Indeed many of their spokesmen have officially and emphatically disclaimed any interest in or responsibility for it. They have asserted that they have only one function, the function of training research people who, they insist, will ipso facto be excellent teachers. They never present any evidence in support of this allegation, and at this late hour I shan't stop to show that it doesn't exist. Instead, I move on to examine the other essential term in the proposition I've presented, namely, "kinds of research."

Logocentric, practicentric, and democentric teaching all draw upon the same fundamental store of knowledge, but teachers choose and organize different data to present to their students depending upon which of the three kinds of teaching they are engaged. These data they must dig out or, otherwise expressed, they must find and arrange through research. If they are logocentric teachers, they must constantly seek new facts and concepts at the cutting edge of their subjects. If they are practicentric teachers, they have less interest in frontier facts and

concepts per se than in the utility of their data for improved practice. Both the logocentrist and practicentrist, however, must engage in detailed factual and conceptual research in order to advance knowledge and to train able practitioners. The democentric teacher needs facts and concepts too, but they must be useful to the non-specialist, to the ordinary citizen. His research, therefore, must be concerned with the finding and the organizing of materials relevant to the needs of his students.

I think that I can best make clear what I mean by telling of a cartoon I once saw. It pictured two women gossiping over a back fence. Says one to the other: "Never mind the gist of it, give me all the details." Now, logocentrists and practicentrists need "all the details" in both their teaching and their research, but to give "all the details" to general students will make a teacher thoroughly ineffective. They will be shunned like the father of the little boy who asked his mother: "What is a penguin?" "It's some sort of an antarctic bird, I think, but ask your father." "No thanks," said the boy, "I don't want to know that much." General students don't want and don't need to know as much about a subject as logocentrically and practicentrically trained teachers typically try to convey to them. This constitutes one of the reasons why so many democentric courses are inferior to the logocentric and practicentric courses taught in graduate and professional schools.

Democentric teachers, to stay vigorously alive, need to be constantly engaged in the wide-ranging research that will offer new interpretations and insights into their general fields. To force them, however, instead to conduct detailed factual investigations usually interferes with good democentric teaching for the reason that such research necessarily concentrates one's attention on small segments of knowledge and thus blocks out the broad view which constitutes the genius of good democentrists.

The identification of two kinds of research (detailed and synthesizing) and three kinds of teaching brings into focus the proposed solution of the teaching-research conflict to which I referred some pages back. Briefly the solution involves two steps. First, the establishment of programs in the graduate school of arts and sciences for the preparation of logocentric, practicentric, and democentric teachers as such. The graduate schools now train all their students in much the same way and certainly with little regard to what kind of teachers they plan to become. Thus they not only fail to give large proportions of their students the kind of education they want and need, but they also prevent the colleges and the undergraduate divisions of universities from fulfilling their major function of general or democentric education. Second, the development of appointment and promotion policies based not upon the amount of detailed factual research that a professor has published, but, instead, upon the quality and relevance of his research -- much of it that may not be published --to his type of teaching.

The year before his death in 1910 William James addressed the alumnae of Radcliffe College, and in the course of his remarks he observed that the rise of research to pre-eminence in American higher education seemed to indicate that in the course of time general or democentric education would be so underprivileged in American colleges and universities that it would be essentially in the hands of the editors of popular magazines.[1] He went on to say that should his prediction be fulfilled, the colleges and universities of the country would have done themselves and the nation incalculable damage. I submit that it has been fulfilled and that the procedures of the graduate school of arts and sciences have made popular magazines, rather than the undergraduate colleges, the most potent agencies of American democentric education. I also submit that this is a most undesirable and, indeed, dangerous situation.

The world situation today has made the integration of colleges and universities into the life of the nation more urgent than ever before in history, and it seems obvious that American higher education cannot meet its obligations and opportunities by means of snail's-pace changes comparable to those that converted some of the colonial colleges into today's comprehensive universities. If these generalizations be sound, then we had better be about the business now, it seems to me, of designing and putting into operation a program that will equitably intermesh logocentric, practicentric, and democentric education.

[1] "The Social Value of the College-Bred," Memories and Studies, 1911, 323-24.